JET GROUTING COLUMNS

This method is nowadays widely used in civil construction and suitable for all soil types. The jet grouting method is used for improving soil parameters or sealing ground surfaces. Jet grouting consists in:

- drilling a hole to the required depth with drill rods equipped with jet nozzles, and then
- pumping the grout through the rising an rotating drilling with the aid of high pressure of 30–50MPa and with a flow of 50–450l/min. For jet grouting cement grout is typically used.

This technology uses a high-pressure jet of grout to break up the natural structure of soil, to loosen and partially replace it and then to bind with soil fractions and form a soil-cement composite. During the process of jet grouting the soil parameters around the composite become uniform and the soil-cement composite shows high resistance and very low permeability. Depending on the jet type, injection time, rod plane motion and drilling rod rotary speed various structures can be formed with different diameters and cross-sections, such as columns, walls, panels, blocks, etc. Their dimensions depend on the technical capacity of the jet grouting systems and soil properties, usually ranging from 0.4 up to 3m. Upon assembly of reinforcement in the formed structure it may be used as a pile or pile wall.